

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method for preparing carbon products from discarded rubber comprising the steps of:
pyrolyzing the rubber in an externally heated, closed retort at a temperature in the range of 450° to 650° until emission of volatiles ceases to thereby obtain a volatiles fraction and a residual char; and
subjecting said char to resonance disintegration of an intensity sufficient to produce an ultrafine carbon powder, said powder characterized in having a particle size distribution when dispersed in water such that at least 75% by volume of the powder particles are less than 10µm in diameter.

Claim 2 (previously presented): The method of claim 1 wherein said resonance disintegration is conducted at ambient temperature in an air medium.

Claim 3 (previously presented): The method of claim 1 wherein said discarded rubber comprises debeaded and shredded scrap vehicle tires.

Claim 4 (canceled)

Claim 5 (previously presented): The method of claim 1 wherein said resonance-disintegrated carbon powder particles are subjected to a further treatment that modifies the surface properties of said powder particles.

Claim 6 (previously presented): The method of claim 5 wherein said treatment comprises contacting the carbon powder with a reactant compound during or after resonance disintegration.

Claim 7 (previously presented): The method of claim 6 wherein said reactant compound binds to particle surfaces through Van der Waals forces.

Claim 8 (previously presented): The method of claim 7 wherein said reactant compound comprises a polynuclear aromatic hydrocarbon.

Claim 9 (previously presented): The method of claim 6 wherein said reactant compound chemically reacts with functional groups present on the carbon particle surfaces.

Claim 10 (previously presented): The method of claim 9 wherein said reactant compound is selected from the group consisting of peroxides, chlorosilanes, and acid chlorides.

Claim 11 (previously presented): The method of claim 6 wherein said reactant compound is an organo-metallic coupling agent.

Claim 12 (previously presented): The method of claim 11 wherein said coupling agent is selected from the group consisting of liquid, multi-functional titanates, zirconates, and aluminates and wherein said contacting comprises spraying a sufficient amount of atomized coupling agent into an fluidized suspension of carbon particles to form at least a partial monomolecular layer of agent on the carbon particle surfaces.

Claim 13 (previously presented): The method of claim 12 wherein the amount of coupling agent is in the range of 0.1% to 1.0% by weight of carbon

particles, and wherein said coupling agent-treated particles are thereafter dispersed in a liquid vehicle to form a suspension.

Claim 14 (previously presented): The method of claim 13 wherein said liquid vehicle is selected from the group consisting of water, alcohol, toluene, and mineral spirits.

Claim 15 (previously presented): The method of claim 14 wherein said suspension comprises a paste concentrate containing between 10% and 35% solids.

Claim 16 (previously presented): The method of claim 15 wherein said concentrate is later further diluted with said liquid vehicle to form an ink.

Claim 17 (previously presented): The method of claim 16 wherein said liquid vehicle is water.

Claim 18 (withdrawn): A carbon powder composition produced by the process of claim 1.

Claim 19 (withdrawn): The composition of claim 18 dispersed in a liquid vehicle to form a suspension.

Claim 20 (withdrawn): The composition of claim 19 wherein said liquid vehicle is water and wherein said liquid suspension is a printing ink.

Claim 21 (withdrawn): A method for modifying the surfaces of carbon particles that comprises subjecting the carbon particles to resonance disintegration and contacting the carbon with a reactant compound during or immediately after the resonance disintegration.

Claim 22 (withdrawn): The method of claim 21 wherein said reactant compound binds to carbon particle surfaces through Van der Waals forces.

Claim 23 (withdrawn): The method of claim 21 wherein said reactant compound chemically reacts with functional groups present on the carbon particle surfaces.

Claim 24 (withdrawn): The method of claim 23 wherein said reactant wherein said reactant compound is selected from the group consisting of peroxides, chlorosilanes, and acid chlorides.

Claim 25 (withdrawn): The method of claim 21 wherein said reactant compound is an organo-metallic coupling agent.

Claim 26 (withdrawn): The method of claim 21 wherein said coupling agent is selected from the group consisting of liquid, multi-functional titanates, zirconates, and aluminates and wherein said contacting comprises spraying a sufficient amount of atomized coupling agent into a fluidized suspension of carbon particles to form at least a partial monomolecular layer of agent on the carbon particle surfaces.

Claim 27 (withdrawn): The method of claim 26 wherein the amount of coupling agent is in the range of 0.1% to 1.0% by weight of carbon particles, and wherein said coupling agent-treated particles are thereafter dispersed in a liquid vehicle to form a suspension.